Droplet size measuring apparatus.

In the droplet size measuring apparatus of the forward scattering method, particles (6) to be measured in a scattering zone (A) having a predetermined scattering path length (L) are irradiated with parallel laser beams. The irradiated beams are scattered by the particles (6) and the scattering beams are detected by the photodetectors (8-1~8-K) arranged at predetermined scattering angles (θ₁~θ₉). The output of the photodetectors (8-1~8-K) are input to the arithmetic operating unit (11), thus the intensity distribution l(θ) of the scattered beams is measured. The droplet size distribution n(D) is calculated from the intensity distribution l(θ) using the following equation:

\[ I(\theta) = f \left[ \frac{l_0 \exp(-\ell \int c(D) n(D) dD \cdot f(D, \theta + \theta_f) n(D) dD)}{\ell} \right] d\ell \]

FIG. 2

[Diagram of laser beam and scattering angles]
## DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
<thead>
<tr>
<th>Category</th>
<th>Citation of document with indication, where appropriate, of relevant passages</th>
<th>Relevant to claim</th>
<th>CLASSIFICATION OF THE APPLICATION (Int. Cl.4)</th>
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<tbody>
<tr>
<td>X</td>
<td>EP-A-0 167 272 (KABUSHIKI KAISHA TOSHIBA) * abstract; page 7, lines 28-38; page 13, line 31 - page 14, line 3; page 16, line 29; page 17, line 6; figures 1,4 *</td>
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<td>G 01 N 15/02 G 01 N 21/49</td>
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<td>Y</td>
<td>EP-A-0 106 684 (KABUSHIKI KAISHA TOSHIBA) * abstract; page 7, lines 28-38; page 13, line 31 - page 14, line 3; page 16, line 29; page 17, line 6; figures 1,4 *</td>
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<td>A</td>
<td>FR-A-2 122 035 (COMPAGNIE INDUSTRIELLE DES LASERS) * page 1, lines 1-10; page 2, line 30 - page 3, line 33; page 5, lines 29-34 *</td>
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<td>A</td>
<td>US-A-4 497 577 (T. SATO et al.) * abstract; column 8, line 24 - column 10, line 30; column 11, line 41 - column 12, line 2; figures 6-8 *</td>
<td>1-4</td>
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The present search report has been drawn up for all claims.

**Place of search**

BERLIN

**Date of completion of the search**

18-07-1989

**Examiner**

MOUTARD P.J.

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<td>SOCIETY OF INSTRUMENT AND CONTROL ENGINEERS&lt;br&gt;vol. 19, no. 10, 1983, pages 53-59; K. TATSUNO: &quot;The Inversion Method for Determining the Particle Size Distribution from the Scattered Light Intensity Pattern in a Laser Droplet Sizer&quot; * abstract; figures 1,8 *</td>
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<td>A</td>
<td>FR-A-2 282 636 (BAYER AG)&lt;br&gt;* page 11, lines 1-21; figure 6 *</td>
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**TECHNICAL FIELDS SEARCHED (Int. Cl.4)**

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